

REMARKS

Claims 15-23 and 26-31 are amended. Claims 15-23 and 25-31 are pending, of which claims 15 and 29 are independent claims

In the Office Action, various claims are rejected under 35 U.S.C. §112 for insufficient antecedent basis for "the bag" and "the heater plate." The claims are amended to address this rejection.

In the Office Action, all claims are rejected as obvious based on a combination of Schirico (US 4 806 736) and Von Arx (US 6 519 835) (claims 15, 16, 18, 21, 23, 26, 28-31) or further in view of Macy (US 2 021 458) (claim 22) or further in view of Forrester (US 6 281 477) (claims 17, 19-20, 27) or further in view of Kochman (US 6 563 094) (claim 25). These rejections are respectfully traversed.

Initially, neither the newly cited references nor the previously cited references address or suggest the problem which is solved by the present invention, namely how to regenerate a bakery product being at room temperature (such as stale bread) to restore its flavor (i.e. in particular make it warmer, softer and more crunchy) in order to fully recover the quality and integrity of a freshly baked product, in a way which is practical, safe, economical, lightweight and in particular affordable for any housemaker in a domestic environment. The cited prior art fails to evoke this problem and of course fails to suggest any satisfactory solution which could be compared with the subject matter of the present invention.

The closest prior art has been discussed in the specification, on page 1, lines 7 to 25. Whilst toasters clearly belong to a category of devices which completely change the characteristics of a piece of bread which is heated and dried and turns brown, pizza boxes are also found inadequate to solve the above-mentioned problem, in particular because their primary purpose of keeping warm a freshly baked product is different from warming a bakery product from room temperature with a controlled evaporation of water.

US 4 806 736 (Schirico), in a manner which is somehow similar to previously cited US 6 281 477 (Forrester) relates to a portable container for heating and storing pizza (Abstract). More specifically Schirico relates to “heated containers for delivering freshly made pizza (col. 1, lines 6-7, see also claim 1, lines 41-43 in col. 4).

In particular Schirico mentions in col. 1, lines 20-33 “A desirable temperature for pizza at the time of delivery is 140°F (60°C) or higher. The better the operator is able to maintain a high delivery temperature, the more successful the business becomes”.

Similarly Schirico mentions in col. 2, lines 9-16: “the heating unit can be controlled by a thermostat which activates the heating element when the temperature at a preselected location within the bag falls below about 165°F (74°C) and shuts the heating element off when the temperature reaches about 180°F (82°C). By maintaining this temperature range within the oven, the pizzas contained therein are maintained above 140°F (60°C)”.

In col. 2, lines 55-60, Schirico further mentions: “with the foregoing in mind, a principal advantage of the invention is that it provides a container for delivering pizza which keeps the pizza piping hot (i.e. above 140°F (60°C) right up until the moment of delivery, i.e. up to 30 minutes after the container is unplugged from its power source” (see also col. 4, lines 21-25).

Thus it is quite clear that Schirico aims at keeping a pizza piping hot once the pizza has been prepared (i.e. a “freshly made pizza”) and just taken out from an oven and does not aim at warming bakery products starting from an ambient temperature such as room temperature.

This is quite different from the purpose of the present invention, as defined in claim 15 or claim 29 which mentions “the heater bag being suitable for use in complete safety for quickly warming bakery products until a temperature between 36°C and 44°C starting from a lower ambient temperature while fully conserving the quality and the integrity of these products and simultaneously improving their flavour”.

Thus whilst Schirico takes into account freshly made pizzas just taken out from an oven at a temperature of about 140°F (60°C) or higher and maintains a temperature between 165°F (74°C) and 180°F (80°C) within the heating box to try to slow down the cooling process of the pizzas during delivery, the present invention has another purpose and acts on bakery products starting at ambient or room temperature (e.g. 18°C to 25°C) to raise their temperature quite significantly until a temperature between 36°C and 44°C.

According to the invention, for each semi-flexible heater plate in contact with natural material comprising cotton, flax and wool, the heating power per cm² lies in the range 0.13 W to 0.24 W or preferably 0.16 W to 0.20 W. This enables a relatively quick and reliable warming of bakery products which are initially at an ambient room temperature, whilst being safe due to the materials used.

The device according to the invention has a power density allowing for a sufficiently high temperature within the heater bag, such temperature at the level of the heater plate being well above the value of 180°F (82°C) mentioned by Schirico as being an upper limit, since actually according to the invention the temperature at the heater plate is usually greater than 100°C (212° F) and even as high as 150°C (302°F) to actually raise the temperature of bakery products in a few minutes from a range of e.g. 18°C -25°C to a range of 36°C-44°C to improve the flavour of the bakery products whilst conserving their quality and integrity and without any risk concerning the safety. The use of an outer lining or of a pocket of natural material comprising cotton, flax and wool warrants that the heater bag will not suffer from the high temperatures unlike artificial materials such as nylon or alike and also plays a role in keeping the necessary moisture within the heater bag which is essential to have an actual regeneration of the bakery product which will simmer to become crunchy and will not be dried, burned or made crispy.

Schirico mentions that “the bag is fabricated of a heavy cloth material in a box-like configuration”. However Schirico fails to mention preferred materials and a document such as Von Arx (US 6 519 835) is of no help for the person skilled

in the art since it mentions at the same time materials such as cotton and wool, which are natural fibers, and materials such as nylon, polyester, polypropylene, polyethylene, which are synthetic fibers, (see col. 6, lines 11-25) as being suitable for constituting a supporting substrate on which a resistance material (such as wires) is applied.

By contrast according to the invention, as claimed in claim 15 or claim 29, it is clearly mentioned that a pocket or an outer lining contacting a heater plate is made of natural material comprising cotton, flax and wool. This increases the safety, avoids the risks of burning which could occur if other artificial materials such as nylon or polyester are used and plays the necessary role in keeping moisture inside the heater bag whilst being lightweight and flexible to allow for the heater plate to be as close as possible to the bakery products.

It is submitted that neither Schirico nor Von Arx suggests that cotton, flax or wool should be selected as suitable materials for a heater bag for bakery products, since they are safe and compatible with the necessary temperature levels and furthermore are able to retain the necessary moisture within the heater bag, whilst the use of materials such as nylon or polyester would be dangerous and unsuitable for a heater bag according to the present invention since they are likely to burn at the required temperatures.

Schirico further fails to teach the use of a heater plate having a heating power per cm² in the range 0.13 W to 0.24 W or preferably 0.16 W to 0.20 W.

Schirico mentions a resistor preferably having resistance of about 3 watts/inch² (see col. 1, lines 61-66), i.e. about 0.46 W/cm², which is approximately between twice and three times the values mentioned in claims 15 and 29.

Such higher values are not suitable for use in a domestic product such as a heater bag which will be used by homemakers and furthermore it will not leave enough time for a bakery product to regenerate to become soft and crunchy.

According to Schirico, a heated delivery bag is plugged into a power source immediately after having been loaded with freshly made pizzas on the site

of production of pizzas and then after 2-3 minutes the container is unplugged from its electrical connection just before loading into the delivery truck (see col. 2, lines 24-31). Accordingly, the container is not plugged either during delivery or after delivery, whereas the heater bag according to the invention is suitable to be plugged at home by any homemaker.

Due to the relatively high power density of the heating element, Schirico uses fiberglass insulation 30 and also requires bracing the sides of the bag with the support means such as Plexiglas strip 24 to prevent the material of the bag from coming into contact with the heating element (see col. 1, line 67 to col. 2, line 8).

By contrast due to the specific power density range and the kind of natural material defined in claims 15 and 29, the heater bag according to the present invention does not require either the 1 inch thick fiberglass insulation 30 or the Plexiglas rigid strips 24 or the aluminum pan 28 to constitute a safeguard around the heating element.

Moreover, unlike the claimed heater bag which has flexible or semi-rigid casing, Schirico discloses a container having rigid walls: a lower rigid panel and an upper rigid panel (see abstract lines 5-11), an aluminum pan 28 and a block of fiberglass insulation 30 (col. 3, lines 45-49), three side panels 15 each comprising a plexiglass strip inserted into a sleeve 22 (col. 3, lines 37-43).

With such a configuration, the heating element 32 is remote from the outer walls whereas the heater bag according to the invention comprises a flexible or semi rigid casing and the semi-flexible heater plate is directly inserted in a pocket of natural material (or according to claim 29 has at least an outer surface contacting an outer lining made of natural material), the pocket of natural material or the outer lining constituting directly a portion of the bottom, of the side walls or of the means for closing the heater bag. The nature of the natural material (cotton, flax or wool) and the power density of the heater plate (0.13 W to 0.24 W) enable a safe operation even in a household and are specifically chosen for

the particular purpose of regenerating bakery products, which is different from keeping a pizza piping hot.

Furthermore it is submitted that the use of Plexiglas, aluminum and a block of fiberglass is unsuitable for controlling the evaporation of water as required in the heater bag according to the invention. According to Schirico the moisture is not captured by materials of the walls of the container. The moisture present in the container is simply evacuated through two grommets 54 (col. 4, lines 18-20) thus rendering the device improper for achieving the aims of the present invention (a warmed loaf of stale bread will not become soft and crunchy if the water escapes from the container and is not retained in a natural material such as cotton, flax and wool).

To sum up the heater bag as claimed in claim 15 may be defined by the following key features.

- a) – it is intended for bakery products made using a flour-based dough,
- b) – it is suitable to be used in complete safety (e.g. for a domestic use by a homemaker),
- c) – it is dedicated for quickly warming bakery products until a temperature between 36°C and 44°C starting from a lower ambient room temperature,
- d) – it is intended to fully conserve the quality and the integrity of the bakery products whilst simultaneously improving their flavour,
- e) The heater bag comprises a flexible or semi-rigid casing defining a bottom, side walls an opening and means for selectively closing the opening,
- f) – the heater bag includes at least one semi-flexible heater plate having an electrical heater element incorporated therein,
- g) – the at least one semi-flexible heater plate is inserted in a pocket of natural material comprising cotton, flax and wool, the pocket constituting a

portion of the bottom, of the side walls, or of the means for closing the heater bag,

h) – the at least one semi-flexible heater plate exhibits a heating power per cm² which lies in the range of 0.13 W to 0.24 W.

By contrast, Schirico discloses a heated delivery bag having the following features:

- a) – it is exclusively intended for “pizza”,
- b) – it is intended to be used within the premises of the pizza maker (in the plugged state) and during the delivery process (in the unplugged state),
- c) – it is dedicated for maintaining the temperature of freshly baked pizza above a predetermined level during delivery,
- d) – it has no effect on the pizza flavour or quality and does not retain moisture,
- e) – the portable container comprises a fabric box with substantially rigid strips positioned at the four vertical corners of the box and connected to the box for maintaining side panels sufficiently rigid to prevent an upper rigid panel from contacting a heating unit supported by a lower rigid panel (see claim 1 of US 4 806 736).
- f) – the portable container includes a heating unit including insulation and a heating element seated in said insulation,
- g) – the heating unit 26 comprises an aluminum pan 28, a block of fiberglass insulation 30 (approximately 1.5 inches thick) seated within the pan 28 and a silicon rubber heating element 32 seated within a depression 31 of the block of fiberglass 30. Two grommets 54 allow moisture to escape from the container.
- h) – the flexible resistor 34 of the heating element 32 has a resistance of about 3 watts/inch² (i.e. a power density of 0.46 W/cm²).

Thus Schirico clearly relates to a device which has another purpose than the present invention: maintaining the temperature or slowing down the temperature decline of an already warm product rather than quickly raising the temperature of a bakery product from an ambient temperature to a higher temperature in a controlled humid atmosphere.

Schirico has another structure than the subject matter of the claimed invention: an aluminum pan, a block of fiberglass insulation and rigid Plexiglas strips define a rigid box with a safety distance between the outer walls of the box and the heating element of comparatively high power, whereas the heater bag according to the invention comprises a flexible or semi rigid casing and the semi flexible heater plate is directly inserted in a pocket of natural material (or according to claim 29 has at least an outer surface contacting an outer lining made of natural material), the pocket of natural material or the outer lining constituting directly a portion of the bottom, of the side walls or of the means for closing the heater bag. The nature of the natural material (cotton, flax or wool) and the power density of the heater plate (0.13 W to 0.24 W) enable a safe operation even in a household and are specifically chosen for the particular purpose of regenerating bakery products, which is different from keeping a pizza piping hot. A loaf of bread put in a container as proposed by Schirico is likely to become stale and crispy rather than soft and crunchy.

It is to be submitted that the inventor and applicant has conducted several tests among pizza containers available on the market and has found that none could be safely and successfully used for the specific purpose of regenerating bakery products such as a loaf of bread, whereas the heater bag according to the present invention permits to obtain quite remarkable results and has already been launched successfully on the French market without being deemed equivalent to any previously known portable container for pizzas. The specific power density range mentioned in claims 15 and 29 results from a long research made by the inventor and is not obvious for the person skilled in the art who will

have completely different power density range proposals in the field of pizza boxes, if one considers prior art documents such as Schirico or Forrester.

The inventor has found that the choice of a power density of a heater plate between 0.13 W and 0.24 W, in combination with the other claimed features, is essential to achieve the aims of the present invention and in particular the required regeneration of the bakery product. Trying to use either lower or greater power densities will not permit to obtain the required result with a reasonable duration of a few minutes.

As mentioned in the description on page 7, lines 2 to 11, according to the invention, an optimum warming temperature of about 36°C to 44°C is obtained for the food with a mean value of about 40°C, “such that the warmed bread retains all its flavor and is neither too hard nor too dry and does not become stale even on returning to ambient temperature. The particular power densities selected for the heater plates 121 and 122 guarantee that water present in the bread is not completely eliminated, in contrast to toast or bread that has been placed in a microwave oven.”

The other references cited by the Examiner to try to remedy the drawbacks of Schirico are the result of an ex post facto analysis.

Once again, since the purpose of the heater bag according to the present invention is quite different from just keeping a pizza hot, the person skilled in the art would not be tempted to start from containers such as those disclosed by Schirico or Forrester.

Von Arx does not make any difference between natural materials such as cotton or wool and synthetic materials such as nylon, polyester, polypropylene or polyethylene (see col. 6, lines 14-25) and therefore does not suggest which materials could be suitable for the specific purpose of the heater bag defined in claim 15.

Concerning claims 17, 19-20 and 27, Forrester has already been lengthily discussed in responses to previous office actions.

Like Schirico, Forrester relates to a pizza delivery bag which is intended for a completely different use than the heater bag according to the present invention, i.e. aims at maintaining a pizza at a certain level of temperature and does not intend to make some bread or other bakery product crunchy.

Actually, although both Schirico and Forrester aim at maintaining pizzas at a certain level of temperature, their characteristics are quite different from one another and none would be suited to the purpose of safely heating stale bread in order to restore its flavor and make it crunchy.

In particular Schirico has a rigid structure with aluminum and Plexiglas which hinder a good control of evaporation of water and the power density is not adequate.

Forrester also fails to teach a power density which could permit to efficiently raise the temperature of a bakery product from ambient temperature and furthermore uses materials such as nylon or polyester which should be excluded from a heater bag aiming at regenerating a bakery product.

Of course the remarks already submitted in response to previous office actions remain still fully valid and could be reiterated.

In particular the remarks previously made concerning Kochman or Macy (named Barnett in the previous office actions) remain fully valid.

Macy does not relate to the same field of endeavor of heating bags and discloses an electric heating pad with an electrical heating element and a woolen panel for the purpose of abstracting moisture from the surrounding air and then applying a moist heat to the body of the user of the pad, thus bringing a therapeutic value.

Contrary to what is stated in the outstanding office action, at the time the invention was made a person skilled in the art would not have embedded the heating element 32 of Schirico in a cotton felting instead of fiberglass as an alternative for insulation since Schirico wants to avoid accumulation of moisture within the container (see the provision of two grommets 54 to precisely evacuate moisture as far as possible).

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Kochman teaches only the ability to achieve different levels of heating power in an arrangement of heating cables, with no teaching of a use in a heating bag nor of the particular heating power density of claim 15.

In view of the foregoing, it is respectfully submitted that all the claims of this application are allowable over the combinations of references cited in the Office Action. Favorable action is respectfully requested.

Applicants hereby petitions for any extension of time which is required to maintain the pendency of this case. If there is a fee occasioned by this response, including an extension fee, please charge any deficiency to Deposit Account No. 50-3661.

If the enclosed papers or fees are considered incomplete, the Patent Office is respectfully requested to contact the undersigned collect at (508) 616-2900, in Westborough, Massachusetts.

Respectfully submitted,

/James F. Thompson/

James F. Thompson, Esq.
Attorney for Applicants
Registration No.: 36,699
Bainwood, Huang & Associates, L.L.C.
Highpoint Center
2 Connector Road
Westborough, Massachusetts 01581
Telephone: (508) 616-2900
Facsimile: (508) 366-4688

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